

Process Safety Management Audit Checklist		
Process Hazard Analysis		
	Y/N	Comments
<b>Documentation</b>		
<p>Has a priority order been determined and documented for conducting initial PHAs based on a rationale that includes at least these factors:</p> <ul style="list-style-type: none"> <li>• the extent of process hazards?</li> <li>• number of potentially affected employees?</li> <li>• age of process?</li> <li>• operating history?</li> </ul>		
Are the initial PHAs for processes covered by the PSM standard being performed as soon as possible?		
Are PHAs updated and revalidated at least every 5 years?		
<p>Does the hazard evaluation use one or more of the following PHA methodologies:</p> <ul style="list-style-type: none"> <li>• What-If?</li> <li>• Checklist?</li> <li>• What-If/Checklist?</li> <li>• Hazard &amp; Operability (HAZOP) method?</li> <li>• Failure Mode and Effects Analysis (FMEA)?</li> <li>• Fault Tree Analysis (FTA)?</li> <li>• Other appropriate methodology?</li> </ul>		
<p>Does the PHA address the following:</p> <ul style="list-style-type: none"> <li>• The hazards of the process?</li> <li>• Previous incidents with likely potential for catastrophic consequences?</li> <li>• Consequences of failure of engineering and administrative controls? (For example, potential injury, maximum release of hazardous materials, property damage, etc.)</li> </ul>		

<p>Does the PHA address the following:</p> <ul style="list-style-type: none"> <li>• Engineering and administrative controls applicable to the hazards and their interrelationships? (Such controls may include appropriate application of detection methodologies to provide early warning of releases, inventory reduction, substitution of less hazardous materials, protective systems such as deluges, monitors, foams, increased separation distances, modification of the process temperature or pressure, redundancy in instrumentation, etc.)</li> <li>• Facility siting? (Review calculations, charts, and other documents that verify facility siting has been considered. For example, safe distances for locating control rooms may be based on studies of the individual characteristics of equipment involved such as: types of construction of the room, types and quantities of materials, types of reactions and processes, operating pressures and temperatures, presence of ignition sources, fire protection facilities, capabilities to respond to explosions, drainage facilities, location of fresh air intakes, etc.)</li> <li>• Human factors? (Such factors may include a review of operator/process and operator/equipment interface, the number of tasks operators must perform and the frequency, the evaluation of extended or unusual work schedules, the clarity and simplicity of control displays, automatic instrumentation versus manual procedures, operator feedback, clarity of signs and codes, etc.)</li> <li>• A qualitative evaluation of a range of possible safety and health effects of failure of controls on employees in the workplace?</li> </ul>		
<p>Are the process hazard analyses performed by teams with expertise in engineering and process operations, including at least one employee with experience and knowledge specific to the process being evaluated and one member knowledgeable in the specific PHA methodology used?</p>		

<p>Has a system been established to promptly address the team's findings and recommendations? Review a representative sample of the documentation. Has the system been able to:</p> <ul style="list-style-type: none"> <li>• Assure that the recommendations are resolved and documented in a timely manner?</li> <li>• Document actions to be taken?</li> <li>• Complete actions as soon as possible?</li> <li>• Develop a written schedule of when actions are to be completed?</li> </ul> <p>Communicate the actions to operating, maintenance, and other employees whose work assignments are in the process and who may be affected by the recommendations or actions?</p>		
<p>Are the PHAs updated and revalidated at least every five years by a qualified team meeting the requirements in paragraph (e)(4), to assure that the process hazard analysis is consistent with the current process?</p>		
<p>Are all initial PHAs, updates or revalidations, and documented resolutions of recommendations kept for the life of the process?</p>		
<p><b>Observations</b></p>		
<p>Do observations of a representative sample of process-related equipment indicate that obvious hazards have been identified, evaluated, and controlled? (For example, hydrocarbon or toxic gas monitors and alarms are present; electrical classifications are consistent with flammability hazards; destruct systems such as flares are in place and operating; control room siting is adequate or provisions have been made for blast resistant construction, pressurization, alarms, etc.; pressure relief valves and rupture disks are properly designed and discharge to a safe area; pipework is protected from impact; etc.)</p>		
<p>Do observations of a representative sample of process-related equipment indicate that PHA recommendations have been promptly resolved?</p>		
<p><b>Interviews</b></p>		
<p><b>PHA Team Member:</b></p>		

Based on interviews with a representative number of the PHA team members, are the PHA methodologies used appropriate for the complexity of the process?		
Based on interviews with a representative number of the PHA team members, is the priority order for conducting PHAs based on the extent of the process, the number of potentially affected employees, the age of the process, and the operating history of the process?		
<p>Based on interviews with a representative number of the PHA team members, have the following been addressed:</p> <ul style="list-style-type: none"> <li>• The hazards of the process?</li> <li>• Previous incidents with likely potential for catastrophic consequences?</li> <li>• Engineering and administrative controls applicable to the hazards?</li> <li>• Consequences of control failures?</li> <li>• Facility siting?</li> <li>• Human factors? (Ask about shift rotations, extended schedules, and other possible sources of error.)</li> </ul> <p>A qualitative evaluation of a range of possible safety and health effects of failure of controls on employees in the workplace?</p>		
Based on interviews with a representative number of the PHA team members, do the members have the appropriate expertise in engineering, process operations, and the process methodology used? Does one member of the team have experience and knowledge in the specific process?		
Based on interviews with a representative number of the PHA team members, does the system established by the company address the team's findings and recommendations promptly?		
<b>Operators and maintenance:</b>		
Based on interviews with a representative number of operator and maintenance employees, have the PHAs addressed the recognized hazards of the process and previous incidents which had a likely potential for catastrophic consequences?		
Based on interviews with operator, maintenance, and other employees who may be affected by PHA recommendations, have actions taken to resolve PHA (5) findings been communicated to these employees?		